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JOB SHEET 2-4-31 CREATING USER FUNCTIONS

INTRODUCTION

Many times, viewing a product or set of products in a useful manner requires numerous screen manipulations. This can become exhausting and frustrating during the course of an active weather event. User Functions are procedures which take some of the button pushing burden off of the operator and onto the software of the system, thereby saving some time and effort.

Up to 60 User Functions can be defined, 30 can be invoked from the Graphics Tablet and all 60 are accessible through the Applications Terminal. User Functions are defined to perform many useful actions, such as: examining a storm through several elevation angles, comparing output from several products pertaining to the same storm, and making one time requests, just to name a few.

OBJECTIVE

Create and invoke a User Function which displays Composite Reflectivity(CR), Vertically Integrated Liquid(VIL), Storm Track(STI), and Echo Top(ET) products in a 4-panel display on the left screen.

REFERENCES

NWS EHB 6-531-1, USERS GUIDE: PUP/RPGOP, Section 11.0

PROCEDURE

- 1. a). From the Main Menu, type U and press **RETURN**.
 - b). The User Function Menu displays. Note in particular two commands:

(W)ait, <seconds> and (EN)d Define and Examine, (E)nd UF

- These two commands are used while defining User Functions, however, they do not always appear on the Edit Screen. You may want to write them down as you will use them later.
- Note that up to 3600 seconds can be used in the "(W)ait, <seconds>"
 command. This command temporarily pauses the User Function for the
 number of seconds entered.

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MAIN MENU

COMMAND: U FEEDBACK:

Enter command and press return. For assistance, press the HELP button (F5).

(C)ONTROL
(S)TATUS
(D)ISPLAY
(R)OUTINE PRODUCT SET
(G)EN AND DISTRIBUTE PRODUCTS
(T)IME LAPSE
(A)RCHIVE
(U)SER FUNCTION

(AD)APTATION DATA (M)ONITOR PERFORMANCE (H)ELP

UNACKNOWLEDGED ALERTS ACKNOWLEDGED ALERTS SYSTEM STATUS ALPHA PRODUCT QUEUE INDICATOR RPG PRODUCT REQUEST STATUS

USER FUNCTION MENU

COMMAND: **U**, FEEDBACK:

Enter command.

(E)XECUTE, <UF#>,<rpg> (C)ANCEL EXECUTION (D)EFINE, <UF#>, <title>

(EN)D DEFINE AND EXAMINE *, (E)ND UF

<UF#>, [User Function # to receive control]

(W)AIT, <SECONDS>

(EXA)MINE, (T)ITLES

<UF#> * [Examine and edit]

*Note: Edit commands are available when the User Function Examine screen is

displayed.

1a

1b

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2. Type **D,1,FOUR_PANEL_ALGORITHM**.

- Option D to create (define) a <u>new</u> User Function.
- Use 1 for the <User Function number>. Valid User Function numbers are 1 through 60, although only 1 through 30 are activated by the Graphic Tablet.
 All 60 can be invoked through the Applications Terminal.
- The <title>, in this case **FOUR_PANEL_ALGORITHM**, can be up to 50 characters in length. Titles may be more than one word, but since spaces are not recognized, you must use hyphens or underscores to separate the words. The User Function title should convey enough information, about that User Function, to tell the operator what to expect.

3. Press **RETURN**.

The feedback line reads "Begin UF 1 Definition".

*CAUTION!!

- At this point, <u>any manipulation performed either at the Applications Terminal or on the Graphic Tablet are included as a step in this User Function</u>. This means someone else <u>cannot</u> operate the Graphic Tablet while you are creating a User Function without all of his/her commands becoming part of your User Function!
- "U" remains on the command line. Any command from the (U)ser Function Menu (such as the "wait" command) must be preceded by a "U". At times you want commands from other menus to be part of your User Function. In those cases, the "U" must be replaced with the letter corresponding to the menu you are accessing..
- The puck button or screen you select, while defining the User Function, is very important. These choices pre-determine which screen the products display on when the User Function is later executed.
- Since this display will be on the LEFT screen, use only the <u>LEFT</u> puck button.

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USER FUNCTION MENU

COMMAND: U,D,1,FOUR PANEL ALGORITHM

FEEDBACK:

2

3

Enter command.

(E)XECUTE, <UF#>,<rpg> (C)ANCEL EXECUTION (D)EFINE, <UF#>, <title>

(EN)D DEFINE AND EXAMINE *, (E)ND UF

<UF#>, [User Function # to receive control]

(W)AIT, <SECONDS>

(EXA)MINE, (T)ITLES

<UF#> * [Examine and edit]

*Note: Edit commands are available when the User Function Examine screen is

displayed.

USER FUNCTION MENU

COMMAND: U,

FEEDBACK: **BEGIN UF 1 DEFINITION**

Enter command.

(E)XECUTE, <UF#>,<rpg>
(C)ANCEL EXECUTION
(D)EFINE, <UF#>, <title>

(EN)D DEFINE AND EXAMINE *, (E)ND UF

<UF#>, [User Function # to receive control]

(W)AIT, <SECONDS>

(EXA)MINE, (T)ITLES

<UF#> * [Examine and edit]

*Note: Edit commands are available when the User Function Examine screen is

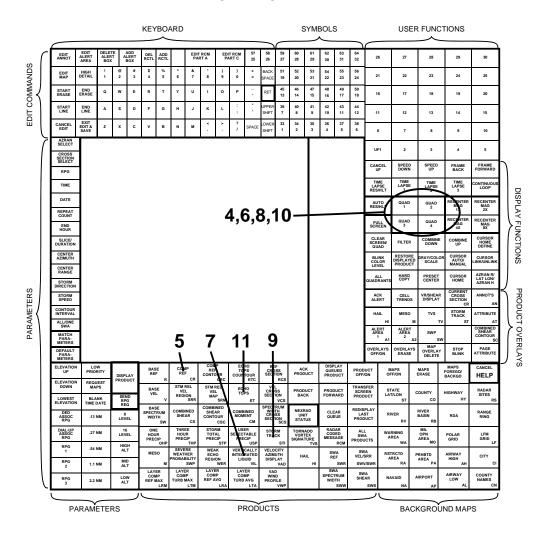
displayed.

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- 4. Select **QUAD 1** (LEFT button at the Graphic Tablet)
 - This puts the left screen in 4 quadrants <u>once the User Function is invoked.</u>
 Nothing happens **now**.
 - NOTE You can tell that your entry has been accepted by looking at the "Feedback" line which reads "Quadrant 1/Cmnd 1". The actual list of commands comprising your User Function definition will not show up until you end your definition (see step 12).
- 5. Select Composite Reflectivity (COMP REF with the LEFT button).
 - This places this product in quadrant 1, and becomes the next line of your User Function.
- 6. Select **QUAD 2**. (LEFT button)
- 7. Select Vertically Integrated Liquid (VIL with the LEFT button).
 - The VIL product goes into quadrant 2.
- 8. Select QUAD 3 (LEFT button).
- 9. Select Storm Track Product (STI with the LEFT button).
 - The STI product goes into quadrant 3.
- 10. Select QUAD 4 (LEFT button).
- 11. Select Echo Tops (ET with the LEFT button).
 - The ET product will go into quadrant 4.
- 12. Type EN,E at the Applications Terminal, (following the "U" on the command line) and press RETURN.
 - This stands for (EN)d, Define and Examine, (E)nd UF. (Recall this command is listed on the User Function Menu.)
 - Your User Function is complete and the entire definition is displayed. If you notice any errors or want to make changes, you may edit the User Function now. You may also invoke the User Function (select UF1 at the Graphic Tablet), or move on to something else by exiting this menu.

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GRAPHIC TABLET



EXAMINE/EDIT USER FUNCTION 1: FOUR_PANEL_ALGORITHM page 1 of 1 COMMAND: U, FEEDBACK: UF 1 DEFINITION COMPLETE **EDIT CMDS:** [EACH EDIT CMD MUST BE PRECEDED BY '(U)SER FUNCTION',] (R)EPLACE END, [(E)ND OR <UF#>] (DEL)ETE,<LINE#> (I)NSERT,<LINE#> (REN)AME UF TITLE, < NEW TITLE> QUADRANT 1 1. COMPOSITE REFLECTIVITY 2. L 3. QUADRANT 2 VERTICALLY INTEGRATED LIQUID 4. 5. QUADRANT 3 6. STORM TRACK (Product) 7. **QUADRANT 4** 8. **ECHO TOPS** 9. U,EN,E

12

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TO EDIT A COMPLETED USER FUNCTION:

- 13. Select **F2** to return to the User Function Menu.
- 14. Type **EXA,1** next to the "U" and press **RETURN**.
 - Feedback reads "Executed U,EXA,1". This displays UF 1 and allows you to make any changes.

Replace the Composite Reflectivity product in quadrant 1 with a Storm Total Precipitation product:

- 15. Type **DEL,2** and press **RETURN**.
 - Feedback reads "Deletion Completed." Line 2 is deleted and the list is subsequently renumbered from there down.
- 16. Type I,1 and press **RETURN**.
 - Feedback reads "Select New Command or Function to Insert After 1". Inserting at the start of a User Function would require you to "insert after line \emptyset (I,\emptyset) ".
- 17. At the Graphic Tablet, select **STORM TOTAL PRECIP (STP)** with the LEFT puck button.
 - This command inserts the STP as step 2 and renumbers the rest of the list. Terminate the edit session by merely ceasing to edit.
 - The other edit commands, not used in this job sheet, are as follows:
 - **U,REN,NAME** used to rename an existing User Function. "NAME" is the new title.
 - **U,R,(E/UF#)** allows you to replace the END command with a command which "chains" this User Function to another, and vice versa. More about that in JS2-4-33.

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USER FUNCTION MENU

Enter command.

FEEDBACK:

14

15,

16

(E)XECUTE, <UF#>,<rpg> (C)ANCEL EXECUTION (D)EFINE, <UF#>, <title>

COMMAND: U,EXA,1

(EN)D DEFINE AND EXAMINE *, (E)ND UF

<UF#>, [User Function # to receive control]

(W)AIT, <SECONDS>

(EXA)MINE, (T)ITLES

<UF#> * [Examine and edit]

*Note: Edit commands are available when the User Function Examine screen is

displayed.

EXAMINE/EDIT USER FUNCTION 1: FOUR_PANEL_ALGORITHM page 1 of 1

COMMAND: **U**, FEEDBACK:

EDIT CMDS: [EACH EDIT CMD MUST BE PRECEDED BY '(U)SER FUNCTION',]

(DEL)ETE,<LINE#> (R)EPLACE END, [(E)ND OR <UF#>]
(I)NSERT,<LINE#> (REN)AME UF TITLE,<NEW TITLE>

QUADRANT 1 1. COMPOSITE REFLECTIVITY 2. L 3. QUADRANT 2 4. VERTICALLY INTEGRATED LIQUID 5. QUADRANT 3 6. STORM TRACK (Product) L QUADRANT 4 7. **ECHO TOPS** 8. U,EN,E

EXAMINE/EDIT USER FUNCTION 1: FOUR_PANEL_ALGORITHM page 1 of 1

COMMAND: U,

FEEDBACK: INSERTION COMPLETED

17 EDIT CMDS: [EACH EDIT CMD MUST BE PRECEDED BY '(U)SER FUNCTION',]

(DEL)ETE,<LINE#> (R)EPLACE END, [(E)ND OR <UF#>]

(I)NSERT,<LINE#> (REN)AME UF TITLE,<NEW TITLE>

```
QUADRANT 1
1.
2.
       STORM TOTAL PRECIPITATION
                                                      L
3.
       QUADRANT 2
       VERTICALLY INTEGRATED LIQUID
4.
5.
       QUADRANT 3
       STORM TRACK (Product)
6.
7.
       QUADRANT 4
8.
       ECHO TOPS
9.
       U,EN,E
```

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There are 2 ways to invoke a User Function:

AT THE GRAPHIC TABLET:

18. Select **UF1** (either button).

*NOTE THAT:

- You may press either button to activate the User Function, however it only runs on the screen specified in the definition, in this case the left screen, regardless of which button you push.
- Once a User Function has run, it is done unless it was designed to create a loop. In the latter case, either the Graphic Tablet box labeled CANCEL UF, or the User Function Menu command U,C for (C)ancel Execution is used. The operator may choose to cancel a User Function at any time, however, this action only cancels the reading of further commands. Any commands already read will still be carried out.

AT THE APPLICATIONS TERMINAL:

- 19. Press F2 (Function Key 2).
 - This returns you to the Previous Menu (which in this case the User Function Menu).
- 20. Type E,1; (after the "U") and press RETURN.
 - This command (E)xecutes < UF#1>.
 - The **(E)xecute**, **<UF#>**, **<rpg>** line is designed to help ease the creation, execution, and number of User Functions. If the User Function is <u>not</u> defined via the Display Menu using an asterisk (*) in the "RPG" column, the **<rpg>** section of this command has no effect on the running of the User Function (see JS2-4-35). Therefore, executing the User Function by selecting UF1 at the Graphic Tablet or by typing U,E,1; at the Applications Terminal all have the same effect.

END

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GRAPHIC TABLET

	KEYBOARD SY														SYME	MBOLS					USER FUNCTIONS					
SDS	EDIT ANNOT	EDIT ALERT AREA	DELET ALERI BOX	ELETE ADD LLERT ALERT BOX BOX		DEL ADD		. EDI		IT RCM EI		DIT RCM 57 PART C 25		58 26	59 27	60 28	61 29	62 30	63 31	64	26	27	28	29	30	1
COMMAN	EDIT MAP	HIGH DETAIL	1	8	3	\$ 4	% 5	6	& 7	8	9)	:	BACK SPACE	51 19	52 20	53 21	54 22	55 23	56 24	21	22	23	24	25	1
	START ERASE	END ERASE	q	w	E	R	т	Y	υ	-	0	Р	1.	RET	45 13	46 14	47 15	48 16	49 17	50 18	16	17	18	19	20	1
TI	START LINE	END	A	s	D	F	G	н	J	к	L		• •	UPPER SHIFT	39 7	40 8	41 9	42 10	43 11	44 12	11	12	13	14	15	
□ (CANCEL EDIT	EXIT EDIT & SAVE	z	х	С	v	В	N	м	٧.	۸.	?	SPACE	LOWER	33 1	34 2	35 3	36 4	37 5	38 6	6	7	8	9	10	1
ARAMETERS	AZRAN SELECT CROSS																	4	0		450	2	3	4	5	1
	SECTION SELECT	-															1	8		CANCEL	SPEED	SPEED	FRAME BACK	FRAME FORWARD	h	
	TIME	1																			TIME LAPSE RES/HLT	TIME LAPSE	TIME LAPSE 2	TIME LAPSE 3	CONTINUOUS	•
	DATE																				AUTO RES/HLT	QUAD	QUAD 2	RECENTER MAG 1X	RECENTER MAG 2X	DISP
	REPEAT COUNT	1																		FULL SCREEN	QUAD	QUAD 4	RECENTER MAG 4X	RECENTER MAG 8X	ISPLAY	
	SLICE/ DURATION	ł																			CLEAR SCREEN/	FILTER	COMBINE	_	CURSOR HOME DEFINE	Į Ę
	CENTER AZIMUTH	1																		BLINK COLOR	RESTOR	ORE GRAY/COL	R CURSOR	CURSOR LINK/UNLINK	FUNCTIONS	
	CENTER RANGE	1																		COLOR LEVEL	PRODUC HARD COPY	PRESET CENTER	MANUAL CURSOR HOME	AZRAN R/ LAT LON/ AZRAN H		
	STORM DIRECTION STORM SPEED	1														ACK	CELL TREND	-	CURRENT	AZRAN H	IJ ¬					
	CONTOUR	1													ALERT HAIL	MESO	DISPLAY	SECTION CR STORM TRACK	ATTRIBUTE	RODUCT						
	ALL/ONE SWA														ALERT AREA	ALERT AREA	M SWP		COMBINED SHEAR CONTOUR	\ \ \ \ \ \						
Δ.	MATCH PARA- METERS DEFAULT																				1 A	1 2 OVERLA	A2 S	STOP	PAGE	OVERLAYS
	PARA- METERS ELEVATION	LOI	w [_	B A 1	. <u>.</u> T	CON	AP.	COM	P	EC TO	но	RE	E.	AG		DISF	PLAY	PROD	OFF/ON	ERASE	DELETE	BLINK	CANCEL	Jä
	ELEVATION DOWN	REQU	EST	DISPL	AY UCT	RE	F R	RE STM	F CR	CONTO	CRC	COUN	TOUR ETC	SECT	RCS	PROD	UCT	PRO	DUCT	OFF	/ON (FF/ON	ERASE	FOREGD/ BACKGD	HELP	SYY
	LOWEST	BLAI	NK	SEND RPG E REQ	D 3	B A : VE		REG	L ION SRR	M A	L P SRM	EC! TO	HO PS ET	VEL CROSS SECTION VO	ION VCS	PRODU BACE	CK	CT PROD FORW	DUCT	SCR		STATE AT/LON ST	COUNTY	HIGHWAY HY	RADAR SITES RS	
	DED ASSOC RPG	.13 N	-	8 LEVI	-	SPECT WID	RUM	COMB		SHE CONTO	AR	COMB	INED ENT CM	SPECT WID CRO SECT	RUM TH SS ION SCS	NEXI UN STA	IT.	CLI	EAR EUE	REDIS LA PROI	ST I	RIVER RV	RIVER BASIN	RDA	RANGE RING	
	DIAL-UP ASSOC RPG	.27 1	4 M	16 LEV	EL	ON HOU PRE	E I R	THR HOL	EE JR	STOR TOTA	R M A L	SELEC PRE	ER TABLE	STO	RM	TORN VOR SIGNA		RAI COI MESS	DAR DED SAGE	AL SW PRODI	Α .	ARNING AREA	MIL OPN AREA MO	POLAR GRID	LFM GRID	
	RPG 1	.54 N	em.	HIG AL	_	MES	ОНР	SEVE	THP RE HER	WEA	STP K	VERTICA INTEGRA	USP CALLY RATED	VELO	IUTH		TVS			SW VEL/	/A R	WA STRCTD AREA	PRHBTD	AIRWAY	CITY	l
	RPG 2	1.1 8	4 M	A L	•	M LAYER COMP		PROBABILITY SWP LAYER COMP		REGION WEI LAYER COMP		LIQUID V LAYER COMP		VA	VAD D	Υ		sv	SWR SW		V/SWR	RA	AREA PA	HIGH AH AIRWAY	COUNTY	
(RPG 3	2.2 N	4M	AL.	r T	REF		TURB	MAX LTM	REF A	VG LRA	TURB	AVG LTA	PROF	ID FILE VWP			WIE	SWW	SHE	SWS	NA NA	AIRPORT AP	LOW	NAMES CN	J
	PARAMETERS PRODUCTS													BACKGROUND MAPS												

20